

Corporate Banking: Electronic Banking Progress Report

Every year, Greenwich Associates conducts hundreds of interviews with corporate executives around the world about the banks they use for general corporate banking, treasury and cash management, and a range of other banking services. As part of that research, we ask executives about the electronic banking platforms (Internet- and file-based) that they use and have them rate the platforms in terms of overall quality. We also “road-test” the Internet platforms of major global and regional banks and non-banks to document the strengths and opportunities for development.

Based on this research, Greenwich Associates maintains a list of the key features that define “Best-of-Breed” e-banking platforms. Because technology evolves so quickly, this is a dynamic list that changes along with the roll-out of new capabilities and the overall maturation of the industry. In this report, we identify the newest features and functions that have emerged as points of differentiation for Best-of-Breed platforms in recent

months and update readers on the banking industry’s progress in integrating and improving upon existing offerings.

In this Greenwich Report we will:

1. Identify the new features and functionality that are defining Best-of-Breed e-banking platforms in 2015.
2. Assess the banking industry’s progress in delivering functionality identified as critical to the corporate treasury function.
3. Inform companies about what they can and should expect from their providers, both today and in the years to come.

In the following sections, we will assess the industry’s progress in delivering on and improving each of eight feature categories.

Eight Characteristics That Define “Best-of-Breed” Platforms

In 2008, Greenwich Associates identified six characteristics that define the best e-banking platforms and tracked the industry’s progress in developing and delivering on these offerings.

This year, Greenwich Associates is adding two additional characteristics to this list:

- 1 Provide secure mobile banking technology that delivers information and insights to smartphones and especially tablets.
- 2 Facilitate unified, fully integrated payment-initiation workflows.

These new additions supplement Greenwich Associates existing list of Best-of-Breed features:

- 3 Using common credentials, offer a single point of entry for all functions including cash reporting, payments, investments, FX, trade finance, and others.
- 4 Provide “high assurance” authentication and authorization.
- 5 Deliver high levels of automation facilitating file imports, delivery of account information and other functions.
- 6 Offer payment authorization and customized alerts on payments, balance levels or other events flagged by users.
- 7 Support self-service and the ability of users to “self-enroll.”
- 8 Offer collaborative tools for users to share information with bank staff and other users of the platforms.

Evolution of Online Banking Platforms

1999 ⇒ 2005 ⇒ 2008 ⇒ 2015

TRANSACTIONAL CAPABILITIES	DECISION SUPPORT TOOLS	PREDICTIVE ANALYTICS	TRUE DIFFERENTIATORS
<i>Balance inquiries and payment initiations</i>	<i>Integrated, customer-focused platforms</i>	<i>Collaborative, dynamic, customizable platforms</i>	<i>Mobile and tablet integration</i>
Little integration. Services accessed through different screens or interfaces.	Timely, accessible information that helps inform business decisions (e.g., intraday balances for multiple account types, approval workflows, status notifications on a single summary screen).	Real-time updates to relevant data. Collaborative training and support allowing for widespread use of the platform's full capabilities.	Broad, secure access to continuously updated data, facilitated by social media technologies. Customers can test scenarios and decisions with customized parameters from any location.

New Features and Functions



Provide secure mobile banking technology that delivers information and insights to smartphones and especially tablets.

In the seven years since Greenwich Associates first identified the features that define Best-of-Breed e-banking platforms, one new capability has transformed the way businesses and individuals do business and interact: mobile technology. Even as mobile devices proliferate throughout our society, many bankers still question the value of mobile technology in a corporate banking context, particularly the return on investment of costly mobile-development projects. Greenwich Associates believes that whether companies develop any demand for full access and functionality through their tablets and smartphones or not, there is undoubtedly huge potential for efficiency improvements through mobile alerts, authentication and other functions. “The question facing banks is not, ‘Is mobile relevant to corporates?’” says Marc Harrison. “Rather, it’s ‘Which of these hundreds of potential mobile apps, features and technologies will catch on, and how should I be optimizing my investments?’”

Greenwich Associates identifies the following Best Practices in Mobile Development:

- ✓ Alerts deleted on the mobile channel are reflected on the core (online) system.
- ✓ Platform supports beneficiary alerting via SMS.
- ✓ Mobile device uses GPS location monitoring (when user initiates support request, it is routed to localized support center).
- ✓ User can view intraday cash position via mobile device.
- ✓ User can send transaction to repair queue via mobile device.
- ✓ Mobile platform provides visibility into recent account activity.
- ✓ Mobile platform utilizes gesture functionality (e.g., swipe up to move from summary balance, view credits, debits, etc.).
- ✓ Mobile approvals can be combined (i.e., one click approval scheme for multiple transactions).



Facilitate unified, fully integrated payment-initiation workflows.

Throughout our list of the defining features and functions of Best-of-Breed e-banking platforms, two characteristics emerge again and again: integration and ease of use. A key shortcoming of early bank Internet offerings was the fragmentation that forced companies

to use separate systems with separate interfaces to access the data they needed and to initiate and execute transactions. This fragmentation originated in banks' own IT infrastructure. Banks have long struggled to integrate legacy systems, many of which were obtained and bolted-on during acquisitions. Nowhere is this challenge more evident to corporate clients than in the payment process, where treasury staff have long navigated a complicated array of systems variously known as wire or telegraphic transfer, ACH, EFT, bill pay, and a number of other monikers.

Only over the past two years have banks begun to roll out integrated payment-initiation workflows that enable companies to initiate payments to any beneficiary in any payment type through a single, unified application. Just as importantly, the new integrated workflows include a search component that allows companies to view complete payment histories for any beneficiary with just a few clicks. These features save time and make it easier to avoid duplicate payments and related errors. The most advanced payment systems integrate a business intelligence component capable of providing benefits like recognizing standard payment patterns for individual beneficiaries and flagging deviations from prior payment standards.

Due to continued challenges in integrating back-end systems, many banks have yet to perfect this feature. However, the functionality of Internet payments is steadily improving, and companies should be pushing their banks to provide a unified, fully integrated payment-initiation workflow.

Best Practices for Improved Payment Workflow:

- ✓ Most-often used accounts appear in drop-down menu in payment screen.
- ✓ Payment screen is dynamically generated (only relevant fields appear based on payment type).
- ✓ User can "prepopulate" payment details in support request created online.
- ✓ User can combine and view/approve multiple payments in a single workflow (e.g., approval, "shopping cart").
- ✓ User can schedule automated upload/download within platform (e.g., payments files, information reporting).
- ✓ User can define currency preferences based on debit account or destination (such as beneficiary location).
- ✓ New beneficiaries are highlighted in list/approvals view.

Core Features



Using common credentials, offer a single point of entry for all functions including cash reporting, payments, investments, FX, trade finance, and others.

As noted in the previous discussion of online payments, as recently as five years ago e-banking systems were limited in their functionality due to the difficulty of integrating legacy systems. Frustrated end-users often had to access different bank systems through individual interfaces. Using multiple applications was cumbersome for users and, in many cases, inhibited the ability of one system to interact with another.

Fortunately for corporate treasury departments, those days are largely behind us. Many e-banking platforms are now delivered through integrated portals that provide all or most of the individual capabilities on a single dashboard. Many of these platforms go far beyond simply being an access point to systems that provide balance reports or payment initiation. Dashboards are becoming the aggregation point for key data from across banks' systems and customers' accounts, as well as instant communications channels.

The rapid development and improvement of bank access portals can be traced to the industry's work with third-party technology specialists who helped import best practices in customer/user experience from other industries. There were countless examples on which to draw from the worlds of online travel, retail merchandising and, of course, retail banking. Borrowing proven features and techniques from established user interfaces enabled the corporate banking industry to quickly ramp up the quality of their own interfaces to the extent that easy-to-use, comprehensive dashboards are now industry standard. "Of course, building a good user interface is only half the battle—maybe less than half," says Brad Anderson. "The real challenge comes in integrating the systems underlying the interface to deliver seamless functionality within and across systems. That is still a work in progress."

That said, there is no debating the rapid progress banks have made in improving their user interfaces and companies should consider an intuitive, easy-to-use portal that provides single point of entry for all functions as "table stakes" for bank platforms.

4

Provide “high assurance” authentication and authorization.

E-banking could never have taken hold among large companies without robust authentication and authorization schemes that are fundamental to security. Early e-banking platforms provided reliable solutions. However, these were highly manual processes requiring significant effort on the part of corporate treasury departments to make additions or other changes. As such, while the systems were sufficient in that they provided the minimum levels of security, companies wanted more efficient processes that would give them more and easier control of the authentication and authorization of their own accounts. Self-service and robust administrative tools were required to make the process of setting up users and entitlements easier and less of a manual process.

In recent years, companies and banks have had an added incentive to demand more functionality in this area. Regulatory compliance demands have become increasingly complicated and burdensome. Banks

must be prepared to provide user and security-related data on a regular and ongoing basis detailing which company officials have access to accounts, which corporate employees have accessed accounts, and creation of user groups which make the management process simpler.

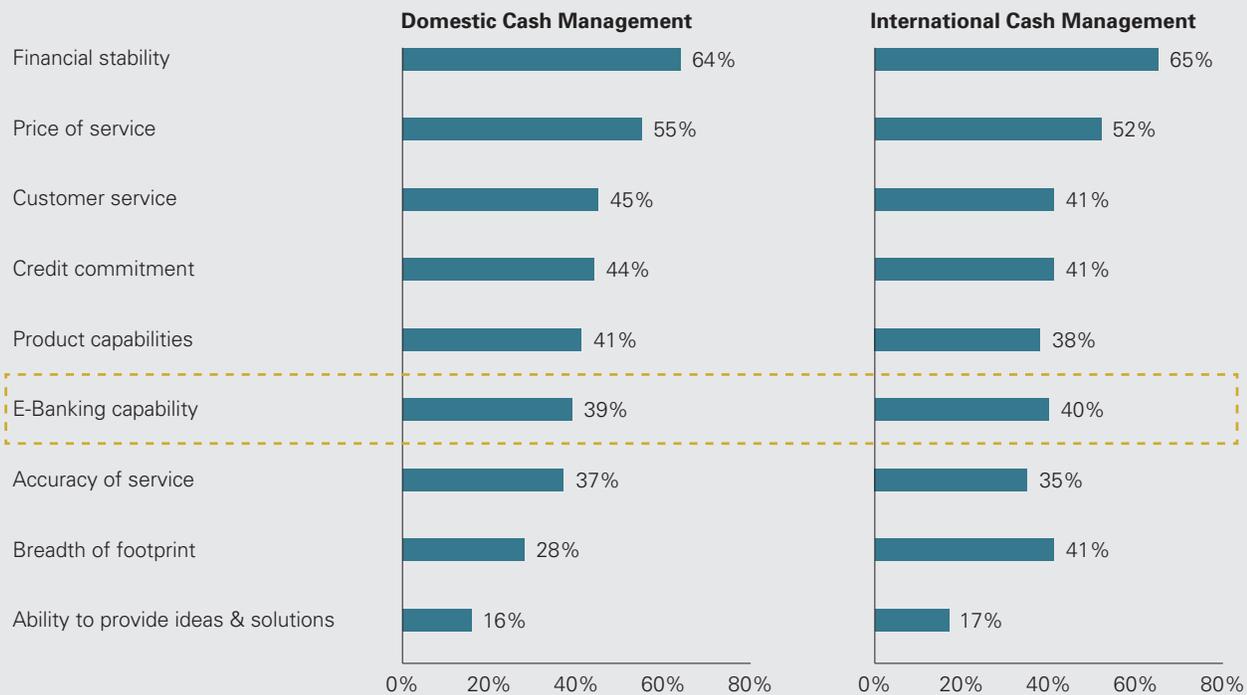
Today’s bank platforms provide these features as automated services. The standardization of these features has saved money for banks that no longer need to allocate resources producing monthly and ad hoc reports, and has given companies improved vision and greater control of their banking accounts.

Best Practices for “High Assurance” Authentication and Authorization:

- ✓ Security administration/compliance:
 - ◆ Admin can assign token (security device) at user creation.
 - ◆ Admin can entitle users to view detail of uploaded files within information reporting.
 - ◆ Mobile login audit reports (i.e., by platform).

Financial stability remains the key criteria for selecting cash management providers. Although credit remains important, global companies are putting more emphasis on e-banking, product capabilities and customer service.

Key Criteria for Cash Management Selection



Note: Based on 1,616 respondents in 2014. Source: Greenwich Associates 2014 Global Large Corporate Cash Management Study

- ◆ At least two primary security admins per client organization are required.
- ◆ Admin can define lockout policy for failed attempts.
- ✓ Fraud Prevention and User Authentication:
 - ◆ Validation of email address associated with user ID (e.g., every six months user must log in and enter verification code).
 - ◆ Admin can set user-level payment amount threshold by payment type.
 - ◆ Bank conducts passive monitoring of transactions (frequency and amount).
 - ◆ User can view current period payments and compare with trend data to detect payment outliers.

Emerging Functionality



Deliver high levels of automation facilitating file imports, delivery of account information and other functions.

Corporate treasury departments continue to be inundated with PDF files of statements and reports, and treasury staffs spend inordinate amounts of time combing through these reports to find relevant data. Increasingly, the vast majority of information is delivered as searchable data that can be manipulated by corporate users. The automation of standard reporting remains important, but it is becoming less so as banks enhance their platforms' ability to deliver dynamic data. This progress represents a game changer for companies and an important shift for bank platforms, as companies leave behind the previous gold standard of custom-defined reports in favor of richer, more interactive data.

Best Practices for Reporting Automation and Data Interactivity:

- ✓ User can schedule intraday reporting at hourly intervals.
- ✓ Smart scheduling capability is available (if report set to run every Monday, on holidays report does not run or runs next/prior day).
- ✓ User can sort reports by format (PDF, CSV, etc.).
- ✓ Ease of viewing item detail (e.g., clicking on check number, magnifying glass icon allows users to see check detail).
- ✓ Inbound and outbound items are available to view online immediately (within 24 hours for checks and items presented in person).
- ✓ User can drill down in the detail of returned information to view who was the payee, when submitted, and who approved.

- ✓ User can view prior-day reports using static FX rate (change currency using drop down).
- ✓ User can view retention period for report.
- ✓ Statements can be delivered in bulk zip files.
- ✓ Batch payment information in statements includes itemization (e.g., assigned reference ID to enable automatic reconciliation).



Offer payment authorization and customized alerts on payments, balance levels or other events flagged by users.

Most bank platforms offer some alert functions, but Greenwich Associates expected these features to reach a greater level of sophistication than has so far been achieved. Specifically lacking is functionality allowing corporate treasury professionals to receive and act upon alerts. For example, companies should be able to set up an alert informing them if balances in a specified account fall below a certain threshold. Ideally, the treasury official that receives the alert should be able to fix the problem by transferring money from another account or taking some other action.

There are an infinite number of ways this functionality could be used by companies. For example, many employees ranging from CFOs to sales representatives spend time on the road or otherwise away from their desktop computer screens. Providing these individuals with interactive alerts can create real benefits. A distribution head in a warehouse might now have to wait to be notified that a client has paid a past invoice before releasing a shipment. This could require phone calls or e-mails with corporate accounting or the sales person on the account, opening the door for mistakes and delays. A system of automated payment notification alerts would greatly enhance efficiency.

The holdup for these features is not in the messaging or mobile technology needed to deliver interactive alerts. Rather, the main impediments to improvements in this area are again the underlying systems of the banks themselves. Due to inefficiencies in the interaction among differing systems—many coming from different homegrown and vendor solutions—banks struggle to capture and deliver relevant data in an automated and timely fashion.

Best Practices in Payment Authorization and Customized Alerts:

- ✓ User can add multiple email addresses for balance alerts (e.g., up to 10 addresses).
- ✓ File level and payment level authorization is available.
- ✓ System capable of transaction-based alerts.
- ✓ Ability to take action from delivery channel.
- ✓ Multiple payment types are supported in file imports.



Support self-service and the ability of users to “self-enroll.”

Self-service is one of the most important and basic benefits of e-banking. As anyone who uses online banking for their personal finances knows, the ability to access accounts, find information, transfer funds, and execute other transactions on your own timetable is a valuable capability. From a customer service perspective, banks have traditionally had trouble accessing relevant information at the right time—as evidenced by something like the widespread phenomenon of having to provide your name and account information multiple times to different representatives at a bank call center.

Avoiding these frustrations is one of the main reasons individuals and companies use e-banking in the first place. As such, the Internet has evolved into the default service channel for many corporate banking functions, and banks’ ability to facilitate and support customer self-service has emerged as one of the most important criteria used in assessing the capabilities and quality of an e-banking platform.

Banks have made considerable progress on this front, and virtually all bank platforms now provide reasonably effective 24/7 access to tools that enable customers to access data in areas ranging from cash balances and credit availability to trade finance transactions currently in process, and to execute a wide variety of transactions.

In the early days of e-banking, companies saw the ability to self-enroll as a key part of self-service. While some banks have made forays into online account opening, self-enrollment has not materialized in any meaningful way. Instead, banks have streamlined processes for onboarding new users and creating and replicating credentials. With those features in place, self-enrollment has become less of a burning issue for corporate users.

Best Practices in Self-Service and Client Onboarding:

- ✓ Cross-channel approach to onboarding:
 - ◆ New clients have the option to register online for new products.
 - ◆ Client onboarding process and conversions to new platform are aligned with development cycle (continuous feedback loop as new clients are implemented).
 - ◆ Preview period for new users allows access to read-only platform first, followed by transactional platform.
 - ◆ Client can copy/paste credentials.
 - ◆ Software required for file imports, digital certificates, etc. is automatically installed and updated.
 - ◆ User can view account balances and take action directly from the home page.



Offer collaborative tools for companies to share information with bank staff and other users of the platforms.

Collaborative tools are becoming an ever more important part of business work processes. In the context of e-banking platforms, true collaborative tools would enable users to access data that can be manipulated and shared with other users within the application. To date, there are few examples of banks providing their customers with effective collaboration tools. Again, the main impediment is not a lack of reliable technology for data sharing and collaboration (think of all of the social networking tools ranging from Twitter and LinkedIn to upstarts like streaming video platform Meerkat), but rather the inability of banks to access and acquire the data needed to populate these applications from within their own internal systems.

This shortcoming demonstrates once again that in order to continue developing and improving their e-banking platforms and user experience, banks will first have to make progress on upgrading and integrating the underlying IT infrastructure that supports their businesses. When they do, they will be able to realize the huge potential that exists for efficiency advances in both their own operations and that of their customers.

Best Practices for Information Sharing and Collaborative Tools:

- ✓ Expanded Integration/Organization:
 - ◆ Approver can view/drill down line item detail in payment files (i.e., not limited to summary/control totals).
 - ◆ User can upload MT messages via https session (i.e., no need for dedicated SWIFT Connect service).
 - ◆ User groups can be created and managed.
 - ◆ Single URL and user credentials for all products/services.

Consultant Marc Harrison leads the Online Services Benchmarking Program and advises on cash management services globally. Brad Anderson is product manager for the Online Services Benchmarking Program.

The following consultants specialize in corporate and investment banking in the regions indicated: Paul Tan (Asia); Peter Kane (Canada); Dr. Tobias Miarka and Robert Stadius-Muller (Europe); and Andrew Grant, Donald Raftery, and Robert Stadius-Muller (U.S.).

Methodology

Every year, Greenwich Associates conducts extensive research with corporate executives around the world about the banks they use for general corporate banking, treasury and cash management, and a range of other banking services. As part of that research, we ask executives about the electronic banking platforms (Internet- and file-based) that they use and have them rate the platforms in terms of overall quality. We also “road-test” the Internet platforms of major global and regional banks and non-banks to document the strengths and opportunities for development.

The data reported in this document reflect solely the views reported to Greenwich Associates by the research participants. Interviewees may be asked about their use of and demand for financial products and services and about investment practices in relevant financial markets. Greenwich Associates compiles the data received, conducts statistical analysis and reviews for presentation purposes in order to produce the final results. Unless otherwise indicated, any opinions or market observations made are strictly our own.

© 2015 Greenwich Associates, LLC. Javelin Strategy & Research is a division of Greenwich Associates. All rights reserved. No portion of these materials may be copied, reproduced, distributed or transmitted, electronically or otherwise, to external parties or publicly without the permission of Greenwich Associates, LLC. Greenwich Associates®, Competitive Challenges®, Greenwich Quality Index®, Greenwich ACCESS™, Greenwich AIM™ and Greenwich Reports® are registered marks of Greenwich Associates, LLC. Greenwich Associates may also have rights in certain other marks used in these materials.

